

THE ACTION FOR THREATENED MOTHS PROJECT

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Historical background

Butterfly Conservation (BC), a registered charity, was founded in 1968 as The British Butterfly Conservation Society. It now has a membership in excess of 8000 and is the largest invertebrate conservation society in Europe. Butterfly Conservation was set up with the aim of protecting our diminishing wild native butterflies and moths from destruction of habitat and other threats. The Society is lobbying continuously for a transformation in our attitudes to the countryside and its wildlife. The Society was entirely managed and run by volunteers until 1990 when an administration headquarters was set up. In 1993 the first full-time Conservation Officer was employed. The Society now has over 15 staff and several contractors working on projects relating to Lepidoptera conservation.

Moths have always been included in the remit of BC, but until recently their profile was comparatively low within the Society. In 1993 BC contributed towards the National Moth Conservation Project, a tangible contribution that has continued to this day. The Society has contributed funds to several moth projects, including work on the Bright Wave *Idaea ochrata* (Scop.), the Marsh Mallow *Hydraecia osseola* (Stdgr.), the Speckled Footman *Coscinia cribraria* (L.) and the Small Dotted Footman *Pelosia obtuse* (H.-S.), and funded an international conference on burnet moths. A number of regional workshops on moths have been organised for branches and there have been a wide range of moth related events held by the branches, e.g. several hundred moth trapping evenings. In 1999 the Society employed MP and DG on a full time basis with funding from English Nature (EN) and BC, along with PW in an advisory role, to work on the Action for Threatened Moths Project and the National Recording Scheme for the Rarer British Macro-moths.

The National Moth Conservation Project and the National Recording Scheme for the Rarer British Macro-moths

The National Moth Conservation Project was launched in 1987 by the former Nature Conservancy Council. This project has been operated by PW since its inception and includes work on species on Schedule 5 of the Wildlife & Countryside Act. There are several aims for this project. These include the formation and operation of a national information gathering network; to provide feedback to recorders; and to produce national distribution maps, particularly for the scarce and threatened species. This enables the regular assessment and revision of the conservation status of our scarce and threatened species. In 1990/91, the National Recording Scheme for the Rarer British Macro-moths was formed as part of the project by linking up existing County Moth Recorders and finding recorders for poorly covered areas.

Further details and a résumé of the history of the project are given in Waring (1998 & 1999a). It is expected that the National Recording Scheme for the Rarer British Macro-moths will be integrated within the Action for Threatened Moths Project. This will provide a single point of contact and maximise the use of the data provided by contributors. Contributors will be informed of any change when it occurs. Ten annual news bulletins have been produced by the National Moth Conservation Project and sent to all County Moth Recorders. It is anticipated that future annual newsletters will be produced covering the National Moth Conservation Project, the National Recording Scheme for the Rarer British Macro-moths and the Action for Threatened Moths project continuing PWs precedent.

Butterfly Conservation's Branch Moth Officers and the County Moth Recorders

Many of the current County Moth Recorders were individuals already working on county lists or providing some focal point for recording in a given county. The BC Branch Moth Officer post is relatively new. These started to be formally recognised and appointments made in 1994. *News bulletin 10* of the National Moth Conservation Project (Waring 1999b, 1999c) lists all the BC Branch Moth Officers and the County Moth Recorders. The role of the BC Branch Moth Officer is broadly to co-ordinate moth issues within the Branch and to promote moth recording and organise local events. This should involve forming and developing links with the County Moth Recorder and ensuring that all records of scarce or threatened moths from the Branch are forwarded to the National Recording Scheme for the Rarer British Macro-moths. Fuller details of the roles of BC Branch Moth Officers are given in Waring (1997). Branch Moth Officers and all other contributors are encouraged to send all records via the County Moth Recorder. In a number of cases the County Moth Recorder is also the Branch Moth Officer.

The UK Biodiversity Action Plan and the Action for Threatened Moths Project

In response to the commitment given by the Prime Minister in signing the *Convention on Biological Diversity* at the Earth Summit in Rio de Janeiro in 1992, the UK Government published *Biodiversity: The UK Action Plan* (UK Biodiversity Group 1994). In discharging our obligations under the Biodiversity Convention, the UK Action Plan set as an overall goal: "To conserve and enhance biological diversity within the UK and to contribute to the conservation of global biodiversity through all appropriate mechanisms". A Biodiversity Steering Group was established to advise government and to assist with work on biodiversity. In 1995 Volumes 1 and 2 of *Biodiversity: The UK Steering Group Report* (UK Biodiversity Group 1995a; 1995b) were published. Volume 2 gave the Short, Middle and Long list of species being considered by the plan (this has since been amended) and included the Action Plans for three moths; the Speckled Footman *Coscinia cribraria*, Netted Carpet *Eustroma reticulatum* (D. & S.) and the Bright Wave *Idaea ochrata*. Further Action Plans were published in UK Biodiversity Group (1999a; 1999b). The preparation of all these documents drew heavily on the information collected by the National Moth Conservation Project.

There are a number of criteria, not all appropriate to moths, by which a species can qualify to be treated under the Biodiversity Action Plan (BAP). Although not comprehensive, the following criteria provide an indication of how the species were selected (after Anon 1995a).

- Threatened endemic and other globally threatened species;
- Species where the UK has more than 25% of the world or appropriate biogeographical population;
- Species where numbers or range have declined by more than 25% in the last 25 years;
- In some instances where the species is found in fewer than 15 ten km squares in the UK;
- Species which are listed in the EU Birds or Habitats Directives, the Bern, Bonn or CITES Conventions, or under the Wildlife and Countryside Act 1981 and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985.

A summary of the *Convention on Biological Diversity* and how BC is working with a variety of partners within the framework of the convention is given by Bourn & Warren (1997).

The species in Table 1 are those covered by the BAP. In this, species are covered by either a Priority Species Action Plan or a Species Statement. The Species Action Plans detail current status, current factors causing loss or decline, current action, objectives and targets and a range of proposed actions. The Species Statements are similar but under proposed action typically recommend monitoring only. For the purposes of the Action for Threatened Moths Project, the Species Action Plans and Statements are both treated equally. BC has agreed to be the Lead Partner for the projects on all but one of the priority moths and butterflies, sometimes in association with a statutory agency (e.g. EN) or an NGO (e.g. the National Trust). It should be noted that several species covered by Schedule 5 of the Wildlife & Countryside Act are not included in this list. Work is expected to continue on these species under the Species Recovery Programme funded by EN or as projects of the Countryside Council for Wales (CCW) or Scottish Natural Heritage (SNH).

Prior to the publication of the majority of these Action Plans, BC started to produce a series of Regional Action Plans to identify regional priorities and draw together local information on priority butterflies and moths. Those already produced include Northern Ireland, Wales, West Midlands and North East England. These all include priorities for moth conservation in the regions, including many species that do not have a national Species Action Plan, and in many cases include details of ecology, distribution and actions necessary for their conservation. Implementing these plans is a major challenge for the Society which will be aided by the Action for Threatened Moths Project.

The work undertaken within the Action for Threatened Moths Project is guided by a Steering Committee, currently made up with representatives of BC, the country agencies (i.e. EN, CCW, SNH and the JNCC) along with moth specialists. The main

rationale behind the Project is to provide a co-ordinated approach to the conservation of the BAP moths and to increase the involvement of volunteers and other organisations in priority moth work. Initial work has included contacting all County Moth Recorders, county moth groups and BC Branch Moth Officers to inform them of the project. Some individuals have been contacted in order to encourage participation in preliminary survey work and new sites have already been discovered for several priority species.

The Future

The project aims to ensure that annual monitoring will be undertaken at key sites for most, if not all, of the BAP species. This may take the form of modified transects after Pollard (1977) and Birkinshaw & Thomas (1999), thorough light trapping or by larval surveys. This monitoring, however, will depend primarily on volunteer effort and future funding for specific work. Further surveys will also take place aimed at understanding the distribution of individual species and identifying priorities for further effort. In some cases extensive autecological research may be needed and substantial additional funds will be required. Fund-raising is thus a vital part of our role in conjunction with specialist staff within BC.

Practical conservation measures are expected to be implemented for many of the BAP species, though in some cases our understanding of an individual species' ecology will need to improve before any measures can be put in place. Part of the process will be to ensure that the local teams of the conservation agencies and land owners are aware of the presence of BAP species.

As is inherent in the BAP process, review of the current list of species will be ongoing. If it becomes obvious that other species have been overlooked and are in need of conservation effort, particularly if they meet the aforementioned criteria, an Action Plan will be drafted and effort made for it to be implemented. With the increase in interest and the publication of a number of key works, such as *The Moths and Butterflies of Great Britain and Ireland* series, the knowledge of the so-called micro-lepidoptera is such that conservation of some may benefit from the formulation and implementation of Action Plans. With an active scheme such as the Pyralid & Plume Recording Scheme run by Tony Davis and the existence of a national review (Parsons 1993), it is comparatively straightforward to identify several species of pyralid moth that are candidates for this approach. It may not be quite so straightforward to identify other candidate species, but if other species reviews are undertaken this task should get easier. In the meantime certain species suggest themselves through habitat concerns, e.g. *Coleophora vibicella* (Hb.) on dyer's greenweed *Genista tinctoria* and *C. ochrea* (Haw.) on common rock-rose *Helianthemum nummularium* growing in exposed situations.

The Council of BC has recently revised the Society's Reserve Acquisition Strategy. Potential reserves will have to meet various criteria, including safeguarding the wildlife interest (for example, land becoming available and threatened through a change in management), education opportunities and location. As opportunities arise, reserves may be established and purchased primarily for their moth interest.

Table 1: Species covered by the Biodiversity Action Plan.

Key: BC = Butterfly Conservation; EN = English Nature; NT = National Trust; RSPB = Royal Society for the Protection of Birds; SNH = Scottish Natural Heritage; † = Wildlife and Countryside Act species.

| Species | English Name | Priority Species Action Plan | Species Statement | Lead Partner |
|---|-------------------------------|------------------------------|-------------------|--------------|
| † <i>Ascometia caliginosa</i> | Reddish Buff | + | | BC |
| <i>Aspitates gilvaria</i> | Straw Belle | + | | BC |
| <i>Athetis pallustris</i> | Marsh Moth | + | | BC |
| † <i>Bembecia chrysidiformis</i> | Fiery Clearwing | + | | BC/EN |
| <i>Calophasia lunula</i> | Toadflax Brocade | | + | BC |
| <i>Catocala promissa</i> | Light Crimson Underwing | + | | BC |
| <i>Catocala sponsa</i> | Dark Crimson Underwing | + | | BC |
| <i>Coleophora tricolor</i> | Basil Thyme Case-bearer | + | | BC |
| <i>Coscinia cribraria</i> | Speckled Footman | + | | BC |
| <i>Cosmia diffinis</i> | White-spotted Pinion | + | | BC |
| <i>Cyclophora pendularia</i> | Dingy Mocha | + | | BC |
| <i>Dicycla oo</i> | Heart Moth | + | | BC |
| <i>Epione vespertaria</i> (= <i>paraellaria</i>) | Dark Bordered Beauty | + | | BC/RSPB |
| <i>Eustroma reticulatum</i> | Netted Carpet | + | | BC/NT |
| <i>Hadena albimacula</i> | White Spot | | + | BC |
| <i>Heliophobus reticulata marginosa</i> | Bordered Gothic | + | | BC |
| <i>Hemaris tityus</i> | Narrow-bordered Bee Hawk-moth | + | | BC |
| <i>Hydrelia sylvata</i> | Waved Carpet | + | | BC |
| <i>Hydracacia osseola hucherardi</i> | Marsh Mallow | | + | BC |
| <i>Hypena rostralis</i> | Buttoned Snout | + | | BC |
| <i>Idaea dilutaria</i> | Silky Wave | + | | BC |
| <i>Idaea ochrata</i> | Bright Wave | + | | BC |
| <i>Jodia croceago</i> | Orange Upperwing | + | | BC |
| <i>Lycia zonaria britannica</i> | Belted Beauty | | + | BC |
| <i>Lygephila cracca</i> | Scarce Blackneck | | + | BC |
| <i>Macaria carbonaria</i> | Netted Mountain Moth | + | | BC |
| <i>Minoa murinata</i> | Drab Looper | | + | BC |
| <i>Moma alpium</i> | Scarce Mervielle du Jour | | + | BC |
| <i>Mythimna turca</i> | Double Line | + | | BC |
| <i>Noctua orbona</i> | Lunar Yellow Underwing | + | | BC |
| <i>Oria musculosa</i> | Brighton Wainscot | + | | BC |
| <i>Paracolax tristalis</i> (= <i>derivalis</i>) | Clay Fan-foot | | + | BC |
| <i>Paradiarisa sobrina</i> | Cousin German | | + | BC |
| † <i>Pareulype berberata</i> | Barberry Carpet | + | | BC |
| <i>Pechipogo strigilata</i> | Common Fan-foot | + | | BC |
| <i>Phyllodesma ilicifolia</i> | Small Lappet | | + | BC |
| <i>Polia bombycina</i> | Pale Shining Brown | + | | BC |
| <i>Polymixis xanthomista</i> | Black-banded | | + | BC |
| <i>Rheumaptera hastata</i> | Argent & Sable | + | | BC |
| <i>Schranksia taenialis</i> | White-line Snout | | + | BC |
| <i>Scotopteryx bipunctaria</i> | Chalk Carpet | + | | BC |
| <i>Shargacuculia lychnitis</i> | Striped Lychnis | + | | BC |
| <i>Siona lineata</i> | Black-venied Moth | + | | BC |
| † <i>Thetidia smaragdaria maritima</i> | Essex Emerald | | + | BC |
| <i>Trichopteryx polycommata</i> | Barred Tooth-striped | | + | BC |
| <i>Trisateles emortualis</i> | Olive Crescent | | + | BC |
| <i>Tyta luctuosa</i> | Four-spotted | + | | BC |
| <i>Xestia alpicola alpina</i> | Northern Dart | | + | BC |
| <i>Xestia ashworthii</i> | Ashworth's Rustic | | + | BC |
| <i>Xestia rhomboidea</i> | Square-spotted Clay | + | | BC |
| <i>Xylena exsoleta</i> | Sword Grass | + | | BC |
| <i>Zygaena loti scotica</i> | Slender Scotch Burnet | + | | BC |
| † <i>Zygaena viciae argyllensis</i> | New Forest Burnet | + | | SNH |

It is expected that increasing use will be made of computer technology, but this will not exclude any individuals from contributing to any aspect of the project. For example, we have been trialing a weekly newsletter sent out via e-mail to surveyors aimed particularly at increasing the recording of the BAP species. Since it is anticipated that there will be an increased use of e-mail for correspondence, our e-mail addresses are given above.

How you can help

Various surveys and monitoring projects are planned and we need volunteers to undertake aspects of these. In the future there may be also the opportunity to become involved with some more intensive autecological work. In the meantime, recording under-worked areas can result in unexpected finds, which can add considerably to our knowledge of individual species. Please ensure that all records are forwarded to the County Moth Recorder, from whom all relevant records should be forwarded to us for future incorporation into the National Recording Scheme for the Rarer British Macro-moths. We hope that surveys for BAP species can be organised and promoted at a local level, for example by the BC Branch Moth Officer or the County Moth Recorder. Obviously, the more people that participate in these surveys then the more comprehensive the results.

It is hoped that this process will also bring Societies such as BC and the British Entomological & Natural History Society and the local BC Branches and the various moth or invertebrate groups into much closer contact and, perhaps, co-operation with individual projects. This will undoubtedly have benefits for all concerned and for moth conservation.

If you have any comments on any aspect of this article or the project we would be pleased to hear from you.

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Hazards of butterfly collecting – Anybody there? – Botswana 1991

The Kalahari really is a most amazing place. It is usually referred to as the Kalahari Desert, but that is technically incorrect. Except for the extreme south-west it gets much too much rainfall to qualify for desert and it is mostly quite dense dry savannah country. The reason that it is known as a desert is that there is hardly any surface water, even during the rainy season. This is due to the fact that the Kalahari is the surface of the largest pile of sand anywhere in the world – up to 700 metres deep.

The only people living here used to be the San peoples, somewhat demeaningly known as bushmen. Their fieldcraft allowed them to eke out sufficient water from tubers and melons, as well as their prey animals, which get their own moisture from the morning dew. One of the most surprising sights in the Kalahari is that of the few resident lions cracking open wild melons (closely related to our watermelons) in order to get at their moisture.

This kind of place is obviously not butterfly country *par excellence*, but those that are present are of great ecological interest, forming a transition between the usual savannah fauna and that of the South African Karoo. An interesting example is the common Citrus Butterfly *Papilio demodocus* Esper.

The Citrus Butterfly is interesting since it is an essentially forest butterfly which pushes out to the very limits of its ecological capacity. The fascinating thing is that it does that in two radically different ways. Its normal host plants are wide-leaved Rutaceae; cultivated *Citrus* – not indigenous to Africa – is now its most frequent host plant, which means it can now live well outside of the forest belt that was once its natural home. *Citrus* gets planted right out on the edge of the desert, be it in Burkina Faso, Niger, Botswana, or Arabia. The butterfly opportunistically establishes itself far into what was previously an impossible habitat. In such areas, with *Citrus* as host plant, the larva is a dark green with some brown adornments, as it is all over the rainforest zone.

But in Arabia, and in the extreme southwest of Africa, the Kalahari and Namaqualand, *P. demodocus* has established itself in a very different, and less opportunistic, manner. It has managed to adapt to more unusual sub-desert host